

Claims

1. An expression vector for transforming a cell, said expression vector comprising a gene coding for a plant fatty acid elongase in reading frame alignment with a promoter capable of increasing expression of said gene, when said transformed cell is in a seed, sufficient to increase the proportion of very long chain monounsaturated fatty acid when compared with a control cell.
2. The expression vector of claim 1 wherein said gene coding for a plant fatty acid elongase is a *Nasturtium* fatty acid elongase gene.
- 10 3. The expression vector of claim 1 wherein said gene coding for a plant fatty acid elongase is a *Crambe* fatty acid elongase gene.
4. The expression vector of claim 1 wherein said gene coding for a plant fatty acid elongase is an *Arabidopsis* fatty acid elongase gene.
- 15 5. A cell comprising a heterologous gene coding for a heterologous plant fatty acid elongase or allelic variant thereof, said cell being capable of producing an increase in proportion of a very long chain monounsaturated fatty acid when compared a control cell lacking said heterologous gene.
- 20 6. The cell of claim 5 wherein said cell is a fungal cell.
7. The cell of claim 6 wherein said fungal cell is a yeast cell.
- 25 8. The cell of claim 5 wherein said cell is a plant cell.
9. The cell of claim 5 wherein said cell is a plant seed cell.
- 30 10. The plant cell of claim 8 additionally comprising a further heterologous gene coding for an additional heterologous plant fatty acid elongase or allelic variant thereof or a heterologous plant desaturase gene or allelic variant thereof.

11. The plant cell of claim 10 capable of producing oil with an increased content of erucic acid or other very long chain fatty acid (C₂₀ or greater).

12. A plant cell according to claim 8 wherein said heterologous gene codes for a 3-ketoacyl-
5 CoA synthase.

13. A plant cell according to claim 8 wherein said very long chain monounsaturated fatty acid comprises erucic acid.

10 14. A seed comprising a plurality of plant cells according to claim 8.

15. A plant comprising a plurality of plant cells according to claim 8.

16. A plant according to claim 15 wherein said plant is a dicotyledon.

15 17. A plant according to claim 15 wherein said plant is a member of the *Brassicaceae*.

18. A plant according to claim 15 wherein said plant is a member of the *Limnanthaceae* or *Tropaeolaceae* or *Simmondsia*.

20 19. A plant according to claim 15 wherein said plant is flax (*Linum usitatissimum* L.).

20. A plant according to claim 17 wherein said plant is of the *Brassica* genus.

25 21. A method for altering erucic acid content of a plant-derived oil which method comprises cultivating a plant according to claim 15 and then extracting a plant-derived oil therefrom which oil has altered erucic acid content.

30 22. Use of a heterologous plant fatty acid elongase gene for altering erucic acid content in a plant.

23. Use of a heterologous plant fatty acid elongase gene for altering the very long chain fatty acid content (C₂₀ or greater) in a plant.